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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,556	04/08/2004	Oscar Ming Kin Law	00100.04.0002	8355

29153 7590 02/13/2007  
ADVANCED MICRO DEVICES, INC.  
C/O VEDDER PRICE KAUFMAN & KAMMHOLZ, P.C.  
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CHICAGO, IL 60601

EXAMINER
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TRA, ANH QUAN

ART UNIT	PAPER NUMBER
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2816

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/13/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/820,556

**Applicant(s)**

KIN LAW, OSCAR MING

**Examiner**

Quan Tra

**Art Unit**

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-10 and 12-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-10 and 12-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This office action is in response to the amendment filed 12/20/06. A new ground of rejection is introduced as necessitated by amendment.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 16-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyazaki et al. (USP 6774705).

As to claim 16, Miyazaki et al.'s figure 14 shows an adaptive supply voltage and body bias apparatus comprising: a master controller (OP and DEC) operative to receive an operation state value, the master controller operative to generate a supply voltage indicator (CMD 12) and a body bias indicator (CMD 13) based on the operation state value (figure 2); a dynamic voltage supplier (VDDGEN) operably coupled to the master controller, the dynamic voltage supplier operative to receive the supply voltage indicator; an adaptive body biaser (VBBGEN) operably coupled to the master controller, the adaptive body biaser operative to receive the body bias indicator; a plurality of computing devices (inverters in figure 18 which shown the detail of circuit MON), each of the computing devices having one of a plurality of threshold voltages, the plurality of computing devices operative to receive a supply voltage from the dynamic voltage supplier and a bias voltage from the adaptive body biaser; a frequency monitor (CMP) operably

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coupled to the plurality of computing devices, the frequency monitor operative to receive an output frequency indicator from at least one of the plurality of computing devices.

As to claim 17, figure 14 shows that the frequency monitor generates a frequency offset value based on a comparison of the output frequency indicator and a reference frequency indicator (REF).

As to claim 18, figure 14 shows that the frequency offset value is provided to the master controller (OP and DEC), the master controller generating a second supply voltage indicator and a second body bias indicator in response to the frequency offset value and the operation state value, the master controller operative to provide the second supply voltage indicator to the dynamic voltage supplier and operative to provide the second body bias indicator to the adaptive body bias circuit.

As to claim 19, figure 18 shows that the plurality of computing devices operative to receive a second supply voltage from the dynamic voltage supplier and a second body bias voltage from the adaptive body biaser.

Claims 19-23 recite limitations similar to claims above. Therefore, they are rejected for the same reasons.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-10, 12-15 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al. (USP 6774705) in view of Lin et al. (USP 6836166).

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As to claim 1, Miyazaki et al.'s figure 14 shows all element of the claims except for each of the computing devices having a respective one of a plurality of different threshold voltages, and each of the plurality of computing devices being operative to receive a supply voltage from the dynamic voltage supplier; the plurality of computing devices being operative to receive at least one body bias voltage from a body biase. However, Line et al. teaches circuit having plurality of computing devices (TCD and TFD) each having different threshold. The advantage of using plurality of different threshold computing devices is for generating more precise signal.

Therefore, it would have been obvious to one having ordinary skill in the art to add lower threshold computing devices to Miyazaki et al.'s figure 18 for the purpose of generating more precise signal. It is noted that the Lin et al.'s computing devices are controlled by two different signals. Therefore, the modified Miyazaki et al.'s computing devices are also controlled by two different sets of signals. The modified Miyazaki et al.'s figure 14 further shows that the master controller further generates a second supply voltage indicator and a second body bias indicator (after the comparator CMP compares signal N14 and signal REF) based on a difference between optimized performance (frequency and phase of signal REF) and actual performance (frequency and phase of signal N14) of the plurality of computing devices, the master controller operative to provide the second supply voltage indicator to the dynamic voltage supplier and operative to provide the second body bias indicator to the adaptive body bias circuit.

Claims 3-10 and 12-15 recite similar limitations of claims 16-23. Therefore, the combination of Miyazaki et al and Lin et al. references also meets the limitations of claims 3-10 and 12-15.

As to claims 24, the modified Miyazaki et al.'s shows plurality of computing devices comprises a first computing device (circuit figure 18) and a second computing device (the newly added lower threshold computing device), each of the first and second computing devices

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comprises at least two transistor devices (PMOS and NMOS) operatively coupled in a push pull configuration, and wherein the output of the first computing device is operated coupled to the input of the second computing device (see Lin et al.'s figure 1).

### ***Response to Arguments***

5. Applicant's arguments have been fully considered but they are not persuasive.

Applicant argues that Miyazaki fails to teach "a frequency monitor operably coupled to the plurality of computing devices and operative to receive an output frequency indicator from at least one of the plurality of computing devices". Figures 14 and 18 clearly show a frequency monitor (CMP) operably coupled to the plurality of computing devices (elements in figure 18, which shows the detail of circuit MON) and operative an output frequency indicator (N14) from at least one of the plurality of computing devices. Applicant assumes circuit figure 18 is a part of circuit LSI. However, Circuit 18 is the detail of circuit MON, not circuit LSI.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

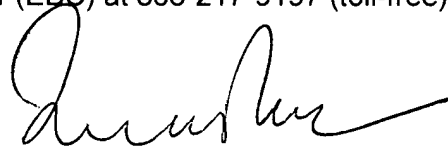
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan Tra whose telephone number is 571-272-1755. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QUAN TRA  
PRIMARY EXAMINER  
ART UNIT 2816

January 31, 2007